

Work Order ID 83400

\*83400\*

Page 1

April-17-12 4:09:31 PM

Item ID: D206-642-541

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop \*NS2\*

Start Date: 17/04/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/04/17 Tooling:

Date:

Run Start \*NR1\*

QC:

Date: SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3274

D

0.00

\*100\*

DOCUMENT CONTROL

DC

0.00

Memo

Document Control

Photocopy bluefile & type labels per PPP D206-642-541

CHG003

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 83400

**\*83400\***

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Item ID: D206-642-541

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Start Date: 17/04/2012 Start Qty: 1.00

**\*1\***

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Required Date: 26/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

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Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110

0.00

**\*110\***

Skidtubes

0.00

Skidtubes

Skidtubes

Memo

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foil 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

3- weld fwd cap as per dwg D3274 and OSI004

AR Aluminum Rod Batch: M120164

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D. Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

SAD 12-04-25

SAD 12-04-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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## Hand Finishing

817104/30

8.764130

76 12.4.30

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 17/04/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC7-Inspect Chemical Conversion Coat	0.00							
<b>*130*</b>									
QC	Memo	0.00							
Quality Control									
150	Skidtubes	0.00							
<b>*150*</b>									
Skidtubes	Memo	0.00							
Skidtubes	1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274								
	2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube								
	3-Bond web in place as per Dwg D3274 & QSI 015. A/RSikaflex-291 <u>7/12/2011</u> Sikaflex expire date: <u>2013-01-04</u> Start: <u>9:00</u> Time: <u>9:00</u> <u>2012-05-01</u> Finish: <u>12-05-03</u> Time: <u>8:00</u> (Adhere for 12 hours)								

① SAD 12-05-01① SAD 12-05-01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 17/04/2012 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160 QC5- Inspect part completeness to step on W/O 0.00

\*160\*

QC Memo 0.00

Quality Control

DD 12-5-2

170 0.00

\*170\*

Skidtubes Memo 0.00

Skidtubes

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2 OPEN HOLES TO .297" . Deburr

3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

DC 12/05/02

SAD 12-05-02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 17/04/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC5- Inspect part completeness to step on W/O	0.00				1	0	86	12/05/03
<b>*180*</b>									
QC	Memo	0.00							
Quality Control									
190		0.00							
<b>*190*</b>									
Skidtubes	Skidtubes	0.00							
Skidtubes	Memo	0.00							
	1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod								
	A/RAluminum Rod <u>M120164</u>								
	3-Grind cross bolt welds flush as per Dwg D3274.								
	4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.								

BE 12/05/03  
04/00 12-5-7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Setup Start \*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop \*NS2\*

Start Date: 17/04/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200 *200* QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00		5/12/05/10					
210 *210* QC Quality Control	QC10- Inspect visual per QSI004- ground welds  Memo	0.00 0.00		5/12/05/10					
220 *220* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3  Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch	0.00 0.00							7/6 12510

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*83400\***

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Item ID: D206-642-541

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 17/04/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
<b>*230*</b> Powdercoat Powder Coating									
	Memo START TIME: <u>3:45</u> OVEN TEMPERATURE: <u>320 OF</u> FINISH TIME: <u>4:15</u>	0.00							
240	QC3- Inspect Part Finish	0.00							
<b>*240*</b> QC Quality Control									
	Memo	0.00							
250	HandFinishing	0.00							
<b>*250*</b> HandFinish Hand Finishing									
	Memo 1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets. A/RN/ALPS-3 <u>AA114596</u> 2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a A/RSikaflex-291 <u>AA121221</u> Sikaflex expire date: <u>12/01</u>	0.00							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item Name: Replacement Skidtube

Start Date: 17/04/2012 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 26/04/2012 Req'd Qty: 1.00 \*1\*

Customer:

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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260

QC5- Inspect part completeness to step on W/O

0.00

\*260\*

QC

Quality Control

Memo

Inspect Nut Plate & Inserts

0.00

8/2/14

(X)

270

0.00

\*270\*

HandFinish

Hand Finishing

HAND FINISHING RESOURCE #1

Memo

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/RSikaflex-291 11/11/271  
Sikaflex expire date: 11/10/11

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: 11/11/596

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/RSikaflex-291 11/11/271  
Sikaflex expire date: 11/10/11

1 0 11/10/11

W/O:		WORK ORDER CHANGES					
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Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280 <b>*280*</b> QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00							
290 <b>*290*</b> Packaging Packaging	Identify as per dwg & Stock Location: <u>PPP</u>  Memo	0.00 0.00							
300 <b>*300*</b> QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00 0.00							

*Srlos14*

*83035*

*P-12/6/12*

*12/6/11*

*mf 12-06-08*

W/O:		WORK ORDER CHANGES					
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# Picklist Print

April-17-12 4:09:34 PM

Page 1

Work Order ID: 83400

\*83400\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

## Comments:

IPP Rev:B05.09.23 Revised per D206-642 Rev. JKJ/JLM

IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM

IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD

IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

IPP Rev:F 08-06-02 add comment DD verified by:EC

IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D2600-1-190

Manufactured No

110

Each

114.0000

1

1

\*D2600-1-190\*

Extrusion Round 3" 206

\*\*

SAD 12-04-25

### Location

### Loc Qty

### Loc Code

HALL

45

69622

45

LG

69

76912

69

D3285-1

Manufactured No

110

Each

49.0000

1

1

\*D3285-1\*

Cap

\*\*

BE12/04/25

### Location

### Loc Qty

### Loc Code

LG002

49

52511

3

52647

46

D3282-041

Manufactured No

150

Each

7.0000

1

1

\*D3282-041\*

Float Web (206L/407)

\*\*

SAD 12-05-01

### Location

### Loc Qty

### Loc Code

LG

7

77498

1

80837

6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

190

Each

1,060.000

12

12

\*D2649\*

Cross Bolt Spacer

\*\*

BE 12/05/03  
B795

Location	Loc Qty	Loc Code
LG	721	
77574	2	
79502	65	
79503	399	
79564	248	
79565	7	
LG001	339	
65317	1	
68224	2	
68507	11	
71355	2	
72704	2	
72841	11	
73390	8	
73857	21	
73858	53	
73859	4	
73860	4	
78020	6	
78583	2	
79566	212	

12

D3275-1

Manufactured No

190

Each

153.0000

12

12

\*D3275-1\*

Crossbolt Spacer

\*\*

BE 12/05/03

Location	Loc Qty	Loc Code
LG	103	
80184	103	
LG002	50	
66930	46	
74437	4	

12

April-17-12 4:09:34 PM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

April-17-12 4:09:34 PM

Page 3

Work Order ID: 83400

\*83400\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-03

Purchased

No

250

Each

1,382.000

2

2

\*CR3212-4-03\*

Cherry Rivet

\*\*

yl 12/05/14

Location

Loc Qty

Loc Code

FP002

394

114859

394

x2

ST331

988

110139

2

119017

986

D3415-041

Manufactured

No

250

Each

14.0000

1

1

\*D3415-041\*

Nut Plate

\*\*

yl 12/05/14

Location

Loc Qty

Loc Code

ST042

14

67605

14

x1

CCR264SS3-3

Purchased

No

250

Each

467.0000

2

2

\*CCR264SS3-3\*

Cherry Rivet

\*\*

yl 12/04/14

Location

Loc Qty

Loc Code

ST331

467

113973

2

117849

109

119017

356

x2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April-17-12 4:09:34 PM

Page 4

Work Order ID: 83400

\*83400\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

250

Each

5,643.000

78

78

\*AI S4-1032-130\*

Insert

\*\*

yl 12/05/14

## Location

## Loc Qty

## Loc Code

ST280

205

119084

116

120671

89

ST281

2438

120807

438

120837

2000

ST282

3000

121269

3000

x78

D3536-15

Manufactured

No

270

Each

34.0000

1

1

\*D3536-15\*

Gasket

\*\*

yl 12/05/14

## Location

## Loc Qty

## Loc Code

FP002

34

73318

16

80333

4

81343

14

yl

D3536-23

Manufactured

No

270

Each

17.0000

1

1

\*D3536-23\*

Gasket

\*\*

yl 12/05/14

## Location

## Loc Qty

## Loc Code

FP002

17

74510

1

80334

16

B83327

yl

April-17-12 4:09:34 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April-17-12 4:09:34 PM

Page 5

Work Order ID: 83400

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*83400\*

\*D206-642-541\*

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-35

Manufactured No

270

Each

43.0000

1

1

\*D3536-35\*

Gasket

\*\*

HL 12/05/14

Location

Loc Qty

Loc Code

FP002

43

80335

7

81340

12

82065

24

✓1

D3536-39

Manufactured No

270

Each

24.0000

1

1

\*D3536-39\*

Gasket

\*\*

HL 12/05/14

Location

Loc Qty

Loc Code

FP

12

82252

12

FP002

12

73317

12

✓1

D3535-15

Manufactured No

270

Each

31.0000

1

1

\*D3535-15\*

Wearshoe

\*\*

HL 12/05/14

Location

Loc Qty

Loc Code

FP001

31

74512

6

80328

12

81354

13

B80328

✓1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April-17-12 4:09:34 PM

Work Order ID: 83400

\*83400\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-35      Manufactured      No      270      Each      40.0000      1      1      \*\*      HL 12/05/14  
 \*D3535-35\*  
 Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	40	
67598	1	
70815	1	
78873	13	
79849	1	
81358	9	
82064	15	

D3535-39      Manufactured      No      270      Each      18.0000      1      1      \*\*      HL 12/05/14  
 \*D3535-39\*  
 Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	18	
69759	1	
73316	5	
74513	12	

D3535-23      Manufactured      No      270      Each      11.0000      1      1      \*\*      HL 12/05/14  
 \*D3535-23\*  
 Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	11	B81355
74508	1	
80330	10	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

April-17-12 4:09:34 PM

Page 7

Work Order ID: 83400

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*83400\*

\*D206-642-541\*

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-3 Manufactured No

270

Each

29.0000

1

1

\*D3537-3\*

Wearpad

\*\*

Al 12/05/14

Location

Loc Qty

Loc Code

FP002

29

78836

24

80338

5

X1

D3537-1 Manufactured No

270

Each

103.0000

9

9

\*D3537-1\*

Wearpad

\*\*

Al 12/05/14

Location

Loc Qty

Loc Code

FG

10

79833

10

FP002

93

69817

5

73716

82

80337

4

81361

2

B81362

X9

AN960C10L NAS1149C0332 Purchased No

R

270

Each

0.0000

80

80

\*AN960C10I \* \*

washer

M121509

\*\*

(x80) Al 12/05/14

AN960C416 NAS1149C0463 Purchased No

R

270

Each

0.0000

1

1

\*AN960C416\*

washer

M119097

\*\*

(x1) Al 12/05/14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April-17-12 4:09:34 PM

Page 8

Work Order ID: 83400

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*83400\*

\*D206-642-541\*

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3672-1 Manufactured No

270 Each

1,010.000 2 2

\*D3672-1\*

Phenolic Washer

\*\*

94 12/05/14

Location

Loc Qty

Loc Code

FP001

34

66821

34

ST060

976

72229

4

76277

472

80369

500

x2

AN3C4A

Purchased No

270 Each

2,818.000 80 80

\*AN3C4A\*

BOLT

\*\*

94 12/05/14

Location

Loc Qty

Loc Code

ST350

2818

120187

1752

120521

28

120769

38

121205

1000

1121556

x80

AN4C5A

Purchased No

270 Each

235.0000 1 1

\*AN4C5A\*

BOLT

\*\*

94 12/05/14

Location

Loc Qty

Loc Code

ST355

235

112243

152

119017

83

x1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April-17-12 4:09:34 PM

Page 9

Work Order ID: 83400

**\*83400\***

Parent Item: D206-642-541

**\*D206-642-541\***

Parent Item Name: Replacement Skidtube

Start Date: 17/04/2012

Required Date: 26/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

75.0000

1

1

**\*D2646\***

Aft Cap

\*\*

*Handwritten:* 12105114

Location

Loc Qty

Loc Code

FP002

75

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

78018

17

79500

1

79562

41

*Handwritten:* 12103114

D3413-1

Manufactured No

270

Each

48.0000

1

1

**\*D3413-1\***

Ring

\*\*

*Handwritten:* 12103114

Location

Loc Qty

Loc Code

ST420

16

79233

16

ST464

32

76754

22

80224

10

*Handwritten:* 12103114

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

RELEASED

07.02.12

DEO ATTACHED

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY	SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

## GENERAL NOTES:

- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- ALL HOLES DRILLED ON CENTERLINES.
- BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
- WELDING TO BE DONE PER DART QSI 004.
- FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
- DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 83400  
12/04/12  
MCSSHOP COPY  
RETURN TO  
ENGINEERING

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

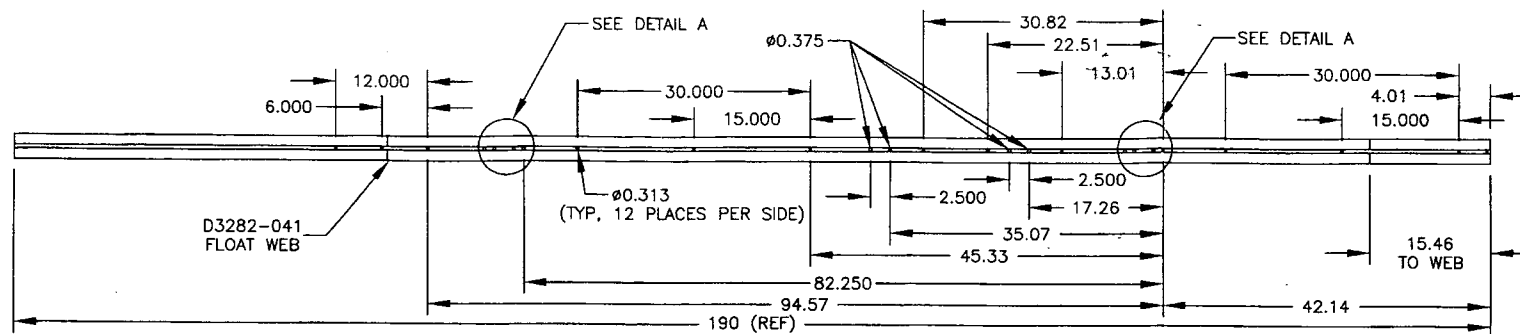
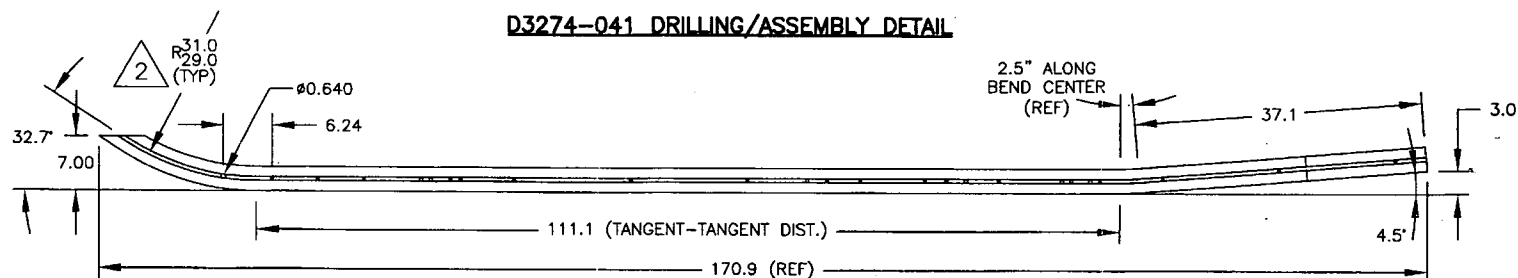
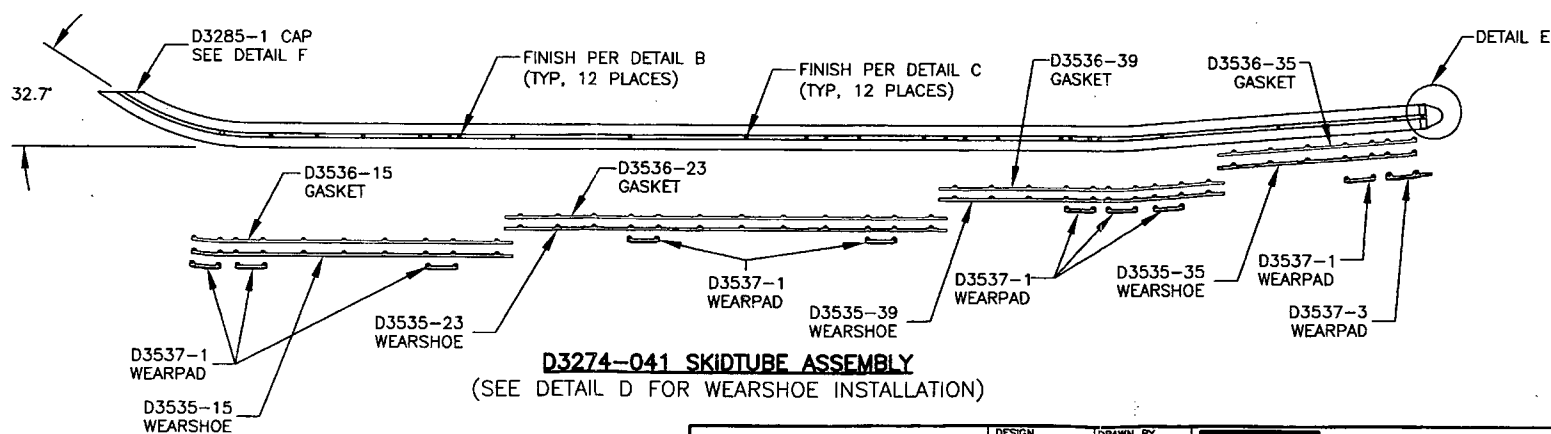
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DEO ATTACHED

**D3274-041 DRILLING/ASSEMBLY DETAIL****D3274-041 BEND/DRILLING DETAIL**

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07.02.12

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DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, WA
CHECKED	#	APPROVED	#	DRAWING NO. D3274
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	
				REV. D SHEET 2 OF 4 SCALE 1:15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

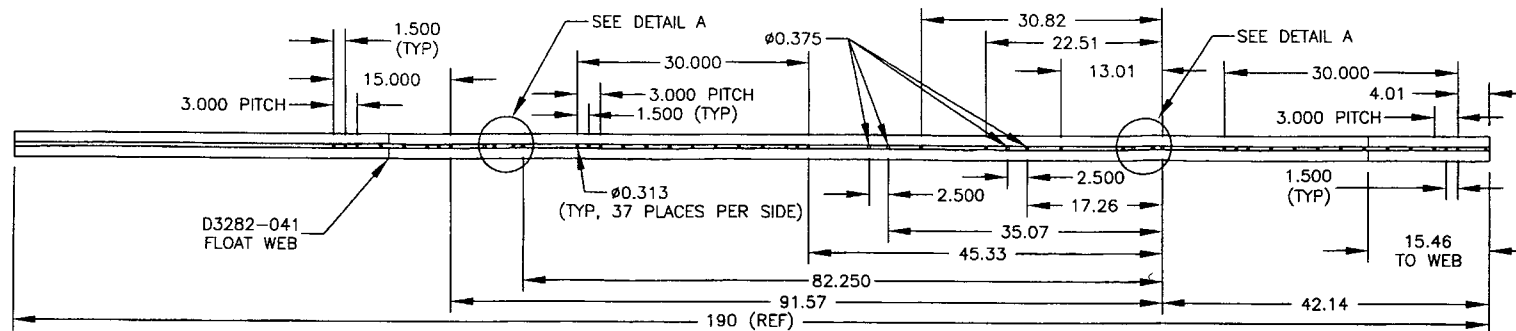
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

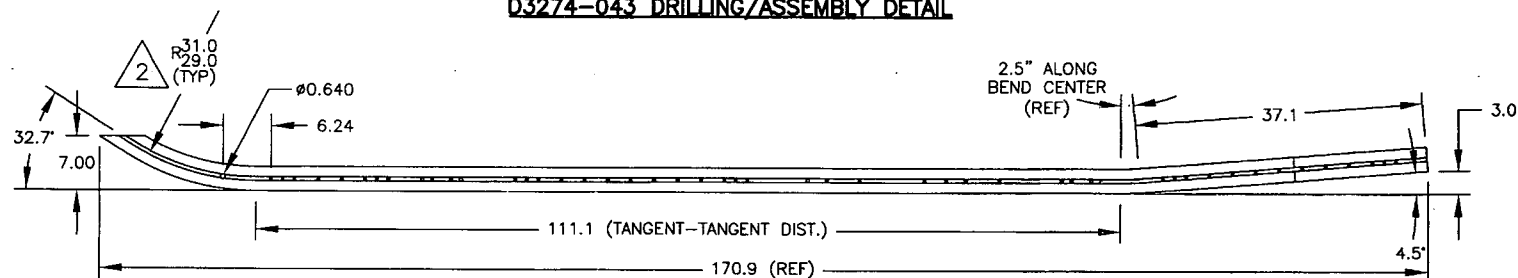
**NOTE:** Date & initial all entries

83400

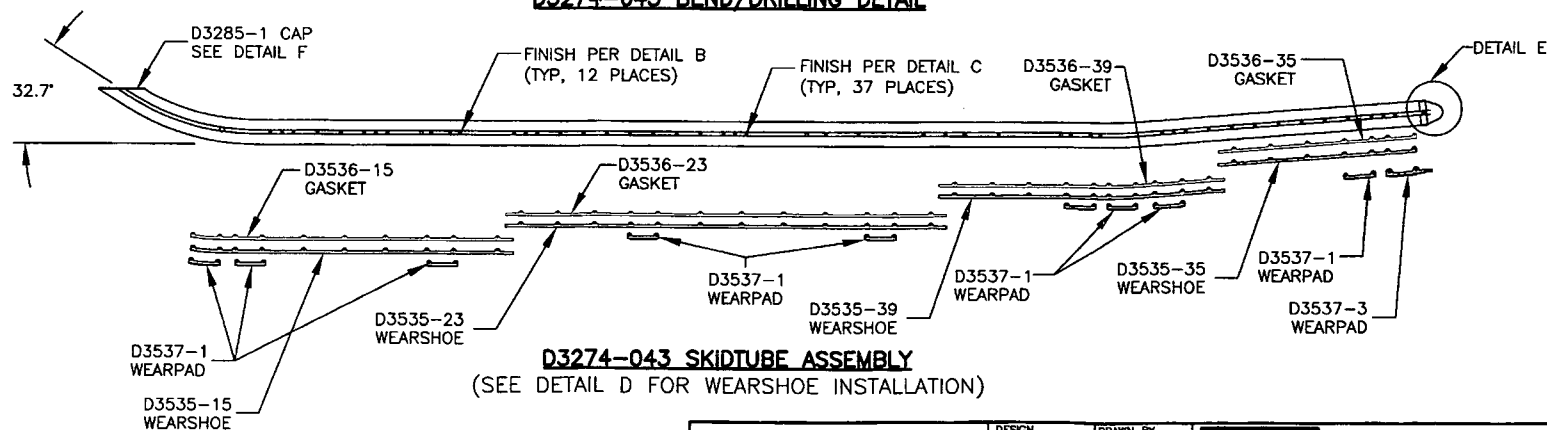
DEO ATTACHED



D3274-043 DRILLING/ASSEMBLY DETAIL



D3274-043 BEND/DRILLING DETAIL



D3274-043 SKIDTUBE ASSEMBLY

(SEE DETAIL D FOR WEARSHOE INSTALLATION)

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07.02.12

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PERSON WITHOUT WRITTEN PERMISSION FROM  
DART AEROSPACE USA, INC.

DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, MA
CHECKED	H	APPROVED	H	
DATE	06.12.19	DRAWING NO.	D3274	REV. D
TITLE				SHEET 3 OF 4
SKIDTUBE ASSEMBLY				SCALE 1:15

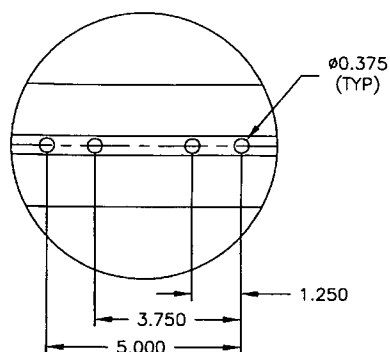
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

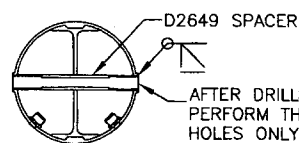
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DETAIL A: DRILL DETAIL****DETAIL B**

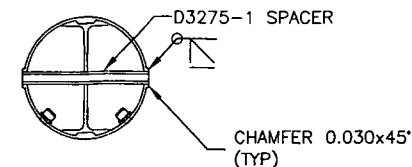
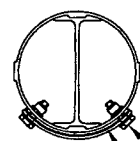
FOR 0.375 HOLES ONLY

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375  
HOLES ONLY:

1. CHAMFER HOLE 0.030x45°
2. INSERT D2649 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE TO 0.313x0.75 DEEP

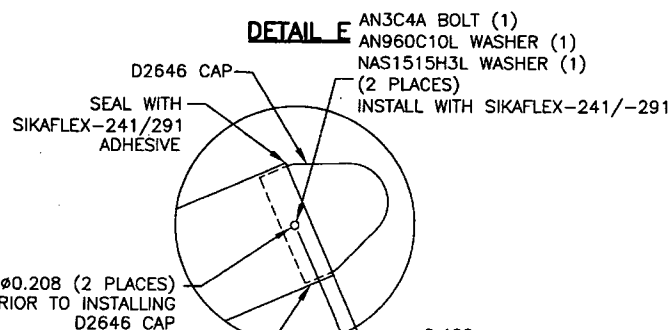
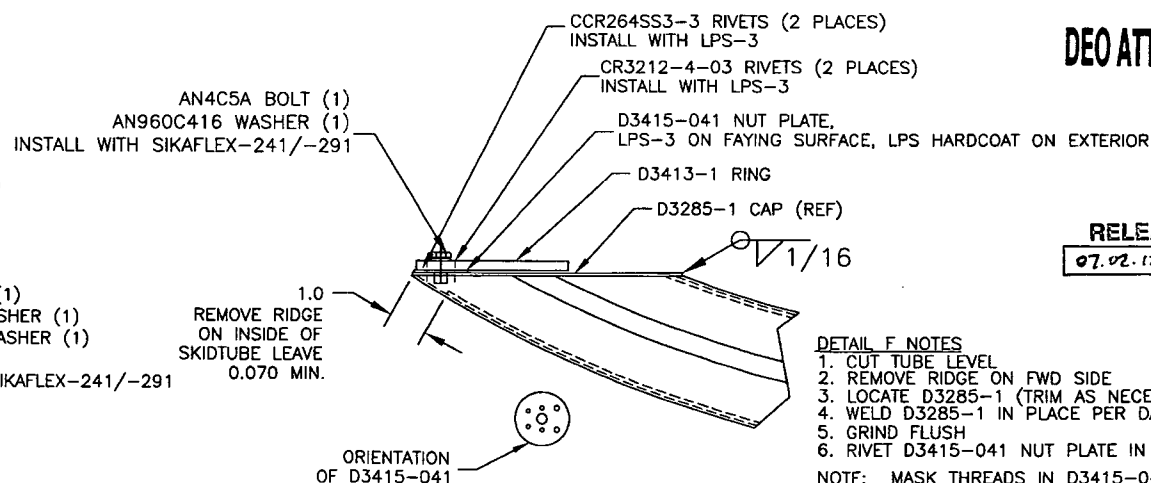
**DETAIL C**

FOR 0.313 HOLES ONLY

**DETAIL D**

- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)

GASKET/WEARSHOE/WEARPAD (REF)

**DETAIL E**0.208 (2 PLACES)  
DRILL PRIOR TO INSTALLING  
D2646 CAPBORE OUT END OF SKIDTUBE  
TO 0.75 DEPTH AND 0.070 WALL**DETAIL F: END FINISHING DETAIL****DEO ATTACHED****RELEASED**

07.02.12

**DETAIL F NOTES**

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

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DART AEROSPACE USA, INC.

DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, MA	REV. D
CHECKED	#	APPROVED	#	DRAWING NO. D3274	SHEET 4 OF 4
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	SCALE	1:3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

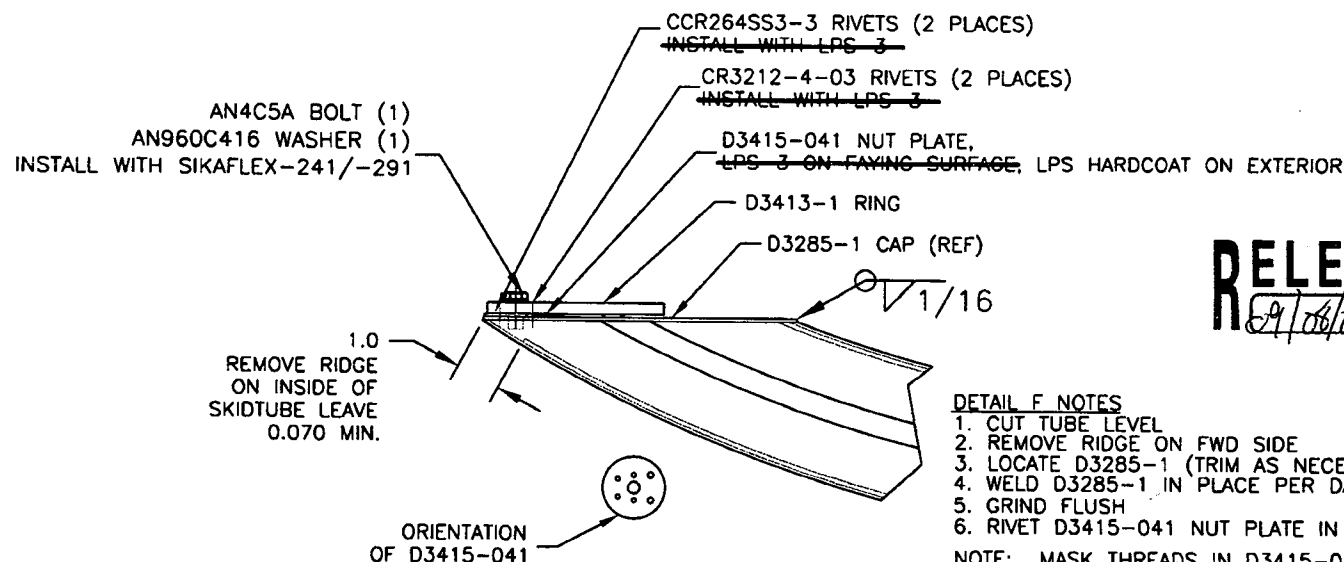
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN UP	CHECKED	MFG. APPR.	APPROVED		DE APPR.		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23		DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041 PRIOR TO FINISH

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



NO. 291

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 83400  
Part number: 1206-642-541  
Description: Skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Alum.  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier [Signature] Date of Test Coupon 12.04.26

Welder Barclay Elliott Date of Test Coupon 12.04.26

The above named individual is qualified in accordance with AWS D17.1.2001 to weld